

METAL CONGRESS AND EXPOSITION OPEN OCT. 3

Assistant Secretary Retired Nov. 1



H. Kenneth Briggs

It is with regret that announcement is made that the services of H. Kenneth Briggs as assistant executive secretary of the Society will terminate on Nov. 1, 1932, because of the economic stress of the times. During his six years of association with the staff of the organization he has very successfully assisted the secretary in managing the affairs of the Society, in expanding and serving its membership and managing the advertising sales of its publications.

Mr. Briggs was graduated from Shattuck School (preparatory) and from the University of Minnesota with the degree of B. S. in Engineering. The course of studies prepared him via an engineering groundwork for a business

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A. I. M. E. MEETINGS TO ATTRACT CROWD

Two Divisions Hold Programs at Congress Oct. 5 and 6

Buffalo, Queen City of the Lakes, singularly accessible by land, water and air, will be the mecca for metallurgists throughout the United States and Canada during the week of the National Metal Congress, Oct. 3 to 7.

There on Wednesday and Thursday, Oct. 5 and 6, the Institute of Metals and Iron and Steel divisions, American Institute of Mining and Metallurgical Engineers, will hold a series of technical sessions, the annual Science Lecture, a dinner and executive committee meetings.

The program opens Wednesday afternoon with the two divisions in separate session. Sam Tour and W. A. Scheuch will preside at the Institute of Metals gathering (in the Georgian Room), before which two important papers on the properties of copper are to be presented. In the Chinese Room of the Hotel, G. B. Waterhouse and J. T. Mackenzie will preside over the session of the Iron and Steel division.

The Institute of Metals presents a group of three papers dealing with cold-worked nonferrous alloys at a session in the Georgian Room, Thursday morning, over which E. M. Wise and A. J. Phillips will preside. A joint session of the Institute of Metals and Iron and Steel divisions will be held in the Chinese Room, Thursday afternoon, with R. F. Mehl and F. N. Speller presiding.

The Science Lecture, which is a feature of the fall meeting of the two divisions, will be delivered by A. W. Hull, of the Research Laboratory of General Electric Co., Thursday afternoon at 4 o'clock, in the Chinese Room. The title of the lecture is "New Vacuum Valves and Their Application." C. H. Mathewson, chairman of the Institute of Metals division, and F. N. Speller, chairman of the Iron and Steel division, will preside jointly at the lecture.

At 6:30 o'clock, Wednesday evening, the Iron and Steel and Institute of Metals divisions will hold their fall meeting dinner. A feature of these dinners in recent years has been the nontechnical postprandial talk. This year the divisions have been fortunate in securing Dr. Zay Jeffries, who will speak on "Tungsten."

REDUCE FARES TO CONGRESS

Usual Low Round Trip Rates Now Include 30-Day Return Limit

Reduced railroad fares to and from Buffalo on the Round Trip Identification Certificate Plan will be available to members, exhibitors, and dependent members of their families attending the National Metal Congress and Exposition in Buffalo the week of Oct. 3.

An innovation this year is the privilege of a 30-day return limit at no advance in the low rate — one and a half fare for the round trip. Tickets at the reduced rates will be on sale from Sept. 29 through Oct. 5.

They can be purchased from ticket agent at starting point only upon presentation of identification certificates sent out by the societies. Tickets must be validated for return passage by agent at railroad station at Buffalo.

WIRE ASSOCIATION PLANS BIG MEETING

1932 Annual Gathering of Interest to All Wire Men

A great 5-day discussion of matters relative to the wire industry features the annual meeting of the Wire Association in Buffalo, Oct. 3-7, the first one held in connection with the National Metal Congress.

Under the direction of the association's officers and directors, sessions were arranged on the following subjects. Open discussion of the papers is planned. Every session but one has been limited to one paper.

Material Handling in Wire Mills; Plant Management; Cost Accounting; Non-Ferrous (2 papers); Patenting and Stainless Steel Wire.

In addition, a meeting of the Manufacturers Committee on Reel and Spool Simplification will be of great interest to the entire industry.

At the annual meeting of the Association on Oct. 7, representatives of the U. S. Army and Navy will discuss the preparedness plan for the wire industry.

Hotel Statler will be headquarters for the Association.

S. A. E. PRODUCTION MEETING ON OCT. 3

Good Technical Program and a Luncheon are Featured

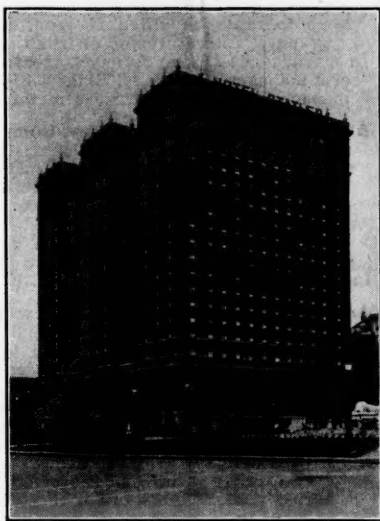
On Monday, Oct. 3, the Production Activity division of the Society of Automotive Engineers will meet with the National Metal Congress in Buffalo in the Georgian Room of Hotel Statler.

The morning session, beginning at 10:00 a. m. will have three papers and two motion picture films, all related to automotive production problems. R. F. Peo, Houde Engineering Corp. will convene the session and F. A. Cornell, Electro Devices Corp., will serve as chairman.

A luncheon meeting will be convened by M. A. Thorne, chairman of the Buffalo section of S.A.E., while Joseph Geschelin, chairman of the Society's Production Meetings committee, will serve as chairman.

At this meeting Kenneth M. Condit, editor of *American Machinist*, will talk on "Adjusting Equipment to Current Conditions." This luncheon meeting will also be attended by the Machine Shop Practice division of the A.S.M.E.

On July 2, 1932, Dr. George Kimball Burgess, director of the United States Bureau of Standards and fourth president of the American Society for Steel Treating, died suddenly at the age of 58. A resolution by the officers and directors of the Society appears on page 6.



Hotel Statler in Buffalo where the eight societies cooperating in the 14th annual National Metal Congress and exposition will make headquarters the week of Oct. 3.

A. W. S. HAS STRONG CONGRESS PROGRAM

28 Papers And Many Welding Exhibits Interest Welders

The annual Fall Meeting program of the American Welding Society to be held in Buffalo during the week of Oct. 3 in connection with the National Metal Congress is probably the strongest welding program held in recent years. Twenty-eight technical papers are scheduled. The technical sessions start on Monday afternoon and close with the annual dinner and dance of the Society on Thursday evening.

A feature of the meeting is a large number of important papers giving the results of research work conducted in the universities and by member companies. A conference of thirty professors engaged in fundamental research work in welding is scheduled on Tuesday evening. Other important papers deal with technique, procedures, test results and practical applications in wide variety of fields.

The merchandising and business side has not been neglected. A whole session is devoted to this subject. Practically all of the papers will be printed in advance and distributed to all the members of the Society. Codes, standards and specifications will also receive considerable attention. Indications are that the Society will have a record attendance of prominent people from the industry.

The Samuel Wylie Miller Memorial Medal Board of Trustees has announced that it intends to present the medal during the annual dinner of the Society to President Frank P. McKibben for his outstanding work in the structural welding field.

The complete program is printed elsewhere in this paper.

A. S. S. T. ANNUAL DINNER SET FOR OCT. 6 IN BUFFALO

Excellent Affair is Planned

The annual dinner of the American Society for Steel Treating will be held at the Hotel Statler in Buffalo on Thursday evening, Oct. 6, at 7:00.

At this time the Henry Marion Howe Medal will be awarded to the author of the best paper published in *Transactions* during the past year. J. M. Watson, president of the Society in 1931, will be awarded the Presidents' Medal for his many and invaluable services.

In addition, Dr. Frederick B. Fisher, Ann Arbor, Mich., will discuss world affairs.

BUFFALO WILL BE HOST TO ANNUAL METAL SHOW AND TECHNICAL PROGRAMS OCT. 3-7

This Newspaper Gives Complete Information on All Phases of Activity of the Eight Cooperating Societies

The 1932 National Metal Exposition will be brilliant, interesting and instructive; the 1932 National Metal Congress will include valuable papers by the country's foremost men of metals. These predictions, made earlier in the year, have become facts now that the fourteenth annual Congress and Exposition are only two weeks away. The date is the week of Oct. 3; the city, Buffalo.

Complete information on all activities of the Congress and Exposition is contained in the pages of this newspaper.

Over 100 firms will exhibit in the Exposition which will open in the 174th Regiment Armory in Buffalo on Oct. 3. This great arena, ideal for such an exposition because it provides ample space under one roof, free from pillars or other obstruction, will house thousands of square feet of displays of products and equipment, and these will be inspected critically by purchasing, operating and laboratory executives from all parts of the country.

A complete list of exhibitors, together with a description of their booths and a list of men in attendance, begins on page 2.

The Congress and Exposition are sponsored annually by the American Society for Steel Treating, with the cooperation of other national organizations in the metal field. This year in addition to the program of the A.S.S.T., sessions have been arranged by the Institute of Metals and Iron and Steel divisions of American Institute of Mining and Metallurgical Engineers, the Machine Shop Practice division of American Society of Mechanical Engineers, the American Welding Society, the Production Activity division of Society of Automotive Engineers, the Wire Association and the American Drop Forging Institute.

All societies in the Congress will make headquarters in the Hotel Statler in Buffalo. Morning technical sessions will be held there, but afternoon meetings will be at the Armory, where there are many large and airy rooms well suited for the purpose.

Papers scheduled on the A.S.S.T. program this year include an unusually large number of practical papers. Only

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A. S. M. E. WILL MEET OCT. 3 IN BUFFALO

Machine Shop Practice Group Schedules Fine Sessions

The American Society of Mechanical Engineers, Machine Shop Practice division, has arranged a program to be held Monday afternoon and evening, Oct. 3 at the Hotel Statler, Buffalo, during the National Metal Congress and Exposition. The program is correlated with that of the program of the Production Activity division of the Society of Automotive Engineers. The S.A.E. will hold a session Monday morning and there will be a joint S.A.E. and A.S.M.E. luncheon meeting Monday noon.

The afternoon session opens with a paper by Walter Ernst on "Influence of Oil Compressibility on Speed Characteristics of Hydraulic High Speed Presses," which will be of considerable value to those confronted with the problem of producing all kinds of presses wherein hydraulics are being considered as a power transmission element.

In the second paper J. E. Miller discusses "Torque Required for Ground Taps" and proves that the previous ideas that they needed greater torque are erroneous.

The third paper of the session by Guy Hubbard will be a general review of trends in machine tool design.

The evening session will open with a paper by R. E. W. Harrison, secretary of the division, who will discuss "Size Control in Precision Grinding." This paper discusses functions of the precision grinding machine and its possibilities in the manufacturing scheme, together with a concise statement regarding its limitations.

The second paper by Mr. Morin discusses the "Design of Products to Utilize Die Casting." This paper deals with the more important phases of die casting manufacturing and contains data which will be of great value to those who have to make designs and choose between competitive methods of manufacturing.

The third paper of the evening session will be on "Materials for Modern Cutting Tools," by J. V. Emmons.

HOURS OF EXPOSITION

The National Metal Exposition will open at noon at the 174th Regiment Armory, Buffalo, Oct. 3. It will be open throughout the week from noon to 10:00 P. M. except on Thursday when it will close at 6:00 P. M.

DROP FORGING MEN IN METAL CONGRESS

Meeting of the American Drop Forging Institute on Oct. 4, 5

This year the American Drop Forging Institute is holding its annual meeting in Buffalo October 4 and 5 as part of the fourteenth annual National Metal Congress. This meeting is open to the entire drop forging industry.

The committee on arrangements has prepared a program that should prove to be of unusual interest to every drop forge executive.

One of the most important subjects for discussion will be the survey of the industry which has just been completed by the United States Department of Commerce. This survey was sponsored by the American Drop Forging Institute and is the first time that the industry has been able to assemble basic facts pertaining to production, sales, capacity and many other phases of equal importance to every drop forge executive.

Never before has any industry manifested the interest in compiling the data on a survey that was shown by the drop forge industry, according to the reports from the United States Department of Commerce, in which they advise that 95% of the questionnaires sent out were answered and returned by executives of the drop forge industry.

THE REVIEW

Devoted to the interests of the American Society for Steel Treating

A Review of the Activities of the Chapters and National Organization of the A. S. S. T.

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B. F. SHEPHERD, DirectorW. B. COLEMAN, Vice-President
W. H. EISENMAN, Secretary
F. B. DRAKE, Director
H. D. MCKINNEY, Director

C. F. PASCOE, Director

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RAY T. BAYLESS
JOHN G. MAPESEditor
Managing Editor

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No. 1

ELEVEN PLANTS IN AND NEAR BUFFALO OPEN
DOORS WIDE TO METAL CONGRESS VISITORS

Eleven plants in and around Buffalo will hang out "Welcome" Signs for visitors to the National Metal Congress and Exposition, Oct. 3-7.

Busses will leave from the Delaware Ave. entrance of Hotel Statler at 9:15 a. m. except for the visits to plants at Niagara Falls. These will leave at 8:15 because of the greater distance to be travelled. Tickets may be purchased at the Hotel. Please buy them one day in advance.

TUESDAY, OCT. 4

Bliss & Laughlin, Inc. Visitors will see modern equipment for cold drawing round, squares, hexagons and flats. Also turning mills in which large rounds are turned to size and centerless grinders for producing rounds with extremely accurate size and highly polished finishes. This plant also has modern facilities for pickling, straightening, polishing and cutting.**American Brass Co.** The processes at the Buffalo plant include electric furnace melting of copper, zinc, lead and tin for a variety of bronzes and bronzes which are rolled into sheets and drawn into tubes. Commercially pure copper cakes and billets from the refiners are rolled and drawn.**Pratt & Letchworth Co.** This plant has modern malleable and steel foundries with facilities for melting, rolling, carburizing and heat treating. There is also a small forge shop and a new and most modern spring plant for manufacturing hot wound coil springs. The spring plant is operating only at night, but arrangements for visiting can be made at the A.S.S.T. registration desks at the Statler and at the Armory.

WEDNESDAY, OCT. 5

Bethlehem Steel Co. The Lackawanna plant is a complete and modern mill with blast furnaces, bessemer and open hearths. Twelve rolling mills produce blooms, billets, sheet bars, rails, structural shapes, plates and bars.

NIAGARA FALLS TRIP

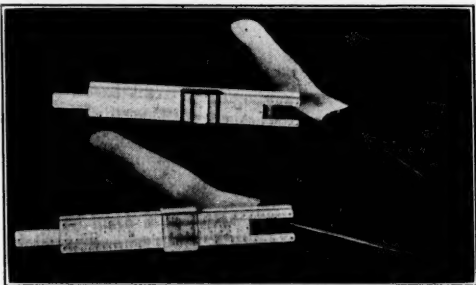
U. S. L. Battery Co. This is a complete plant for the manufacture of storage batteries, car lighting equipment and electric welding apparatus.**Niagara Falls Power Plant.** A total capacity of nearly 500,000 h. p. is the rating of this plant, which produces more power than any other hydro-electric plant in the world.

Negotiations are under way to secure permission to visit other interesting plants in Niagara Falls.

THURSDAY, OCT. 6

Republic Steel Corp. The Buffalo division of this corporation is a modern well located plant with two blast furnaces, nine open hearths, one 38" blooming mill, one 18" continuous billet mill, 10" and 14" bar mills, and cold drawing and die rolling departments.**Buffalo Bolt Co.** Over 75 years experience and a capacity of 1,500,000 bolts and 2,500,000 nuts per day characterize this plant which occupies 23 acres. Departments include rolling and wire mills, cold heading and cold punching, hot forging and hot punching, automatic pointing, threading and nutting, heat treating, electro zinc, cadmium and lead plating, hot galvanizing, parkerizing, machine shop and tool making.

FRIDAY, OCT. 7

Curtis Aeroplane Motor Co. This is the largest plant in the country devoted exclusively to aircraft. Only military planes are produced, both for the United States and for foreign governments. The plant has the largest wind tunnel of any commercial organization.**Pierce Arrow Motor Car Co.** Those who visit here will see all machining divisions and the tool room, motor assembly, body mill, body frame, body sheet metal, interior trim, paint and final assembly departments.**Seneca Iron & Steel Co.** This modern, well equipped sheet mill has a capacity of 15,000 tons per month of all grades of sheets including black, deep drawing, furniture and full finished auto body. About 70% of the production is auto body grade.THIS
POCKET
SLIDE RULE
REALLY
WORKS

This slide rule is indispensable in making frequent calculations in the plant, the laboratory or on the road. It's sturdily built and very accurate.

The rule is 5 inches long and has square, tangent, sine and logarithm scales in addition to the usual scales for multiplying and dividing. The divisions are ruled with extreme accuracy. Built of plied bamboo held rigidly by an aluminum frame, the rule will not warp or gather dampness in normal use. The slide is a sturdy metal frame protecting a solidly mounted glass. A magnifier available at slight additional cost, aids materially. . . . The price is only \$2.50 for the rule and leather case; with magnifier, \$3.00.

You can have the rule for 10 days free examination.

ORDER BLANK

To: AMERICAN SOCIETY FOR STEEL TREATING, 7016 Euclid Ave., Cleveland, Ohio

Please send me _____ pocket slide rules for 10 days free examination.

_____ rules without magnifier at \$2.50 each. _____ rules with magnifier at \$3.00 each.

() Cash enclosed. () Please render invoice and I will pay promptly

Name _____

Street and No. _____

City _____

State _____

Exhibitors, their Displays and Representatives

Air Reduction Sales Co., New York. Booths G-7 and G-9.**Ajax Electric Co., Inc., Philadelphia.** Booth C-1.
Exhibiting (in operation): The newly developed electric ammonia dissociator which yields a dry gas containing 75% hydrogen and 25% nitrogen suitable for non-oxidizing furnace atmospheres, atomic hydrogen welding, reduction of metallic oxides, radio tube and lamp manufacture, etc. A display of photographs illustrating the construction and principle of operation of Ajax electric heat treating furnaces, including the continuous strip annealing furnace widely introduced in Europe during the past two years.

In attendance: G. H. Clamer, president; William Adam, Jr., vice-president; John E. Haig, secretary.

Ajax Electrothermic Corp., Trenton, N. J. Booth C-1.

Exhibiting: Photographs of equipment; a large easel with photographs mounted thereon, and also other photographs. Literature for distribution.

In attendance: Dudley Wilcox, treasurer and assistant general manager; Robert N. Blakeslee, Jr., secretary and sales manager; A. D. Meyer, sales metallurgist.

American Brass Co., Waterbury, Conn. Booth D-16.

Exhibiting (in operation): Demonstrations of carbon and metal arc welding of Everdur metal. C. E. Swift, welding engineer, will conduct demonstrations. Set displays will include Everdur tanks, automatically welded, as well as other Everdur specimens welded by both gas and electric methods. There will be a display of iron castings repair welded with Tobin bronze filler rod.

In attendance: W. Harold Dowd, C. E. Swift, A. M. Dinkler.

American Car and Foundry Co., New York. Booth G-3.

Exhibiting (in operation): No. 3 three-electrode rivet heater, for heating rivets from 1/2 to 1 1/2" in diameter, and of any length from 1" under the head up to 7 3/4". This is our regular standard rivet heater, of which we have over 3000 in use. The forging heater we will show at this exhibit will be a single-electrode Type "G" heater, with automatic feed, automatic kick-out, and with the temperature controlled by the use of electric eye, so that it is impossible for the operator ever to burn a piece of steel, or for the temperature in one piece of steel to vary from another over 20°. The heater exhibited will work on stock from 3/8" in diameter up to 1", and varying lengths up to 12". Also a valve stem heater which can also be used for heating rivets in plier stock, heating stock for upsetting for screw-drivers, or heating the ends of stock for knurling across the screw-driver handle; and arranged in a slightly different manner, it can heat all sizes and types of wire upholstery springs for automobile seats, mattresses and spring beds.

In attendance: F. C. Cheston, sales agent; J. S. Helt.

American Cyanamid and Chemical Corp., New York. Booth C-21.

Exhibiting: Sales and technical representatives who will welcome an opportunity to discuss with those interested any metallurgical problems which may be presented. We will also have available for distribution to visitors literature describing the Aerocase process in its various applications in the heat treating shop.

In attendance: L. E. Swenson, assistant sales manager; P. E. Holder, metallurgist; George D. Johnston, metallurgist.

American Electric-Furnace Co., Boston. Booth Gas Section.**American Gas Association, New York.** Booth Gas Section.**American Gas Furnace Co., Elizabeth, N. J.** Booth Gas Section.**American Lubricants, Inc., Buffalo.** Booth F-15.

Exhibiting: Lubricating oils and greases both industrial and automotive.

In attendance: Geo. W. Miller, president; Paul E. Fitzpatrick, treasurer; Chas. Craig, R. R. Weiffenbach, sales department.

American Steel & Wire Co., Chicago. Booth E-6.

Exhibiting (in operation): Premier welding wire, USS stainless and heat resisting alloy steels, S.A.E. alloy steels, cold rolled strip steel, cold finished steel bars and other wire products. In addition there will be an actual demonstration of the application of welding which will be very interesting.

In attendance: F. Connell, sales manager, manufacturers sales department, New York; J. Graham, sales manager, cold rolled strip steel and springs department, New York; H. B. Maguire, assistant to vice-president and general manager of sales, Chicago; G. J. McGregor, assistant sales manager, manufacturers sales department, Chicago; F. O. Howard, sales manager, Buffalo; W. E. Mackley, assistant manager, manufacturers sales department, New York; G. S. Rose, New York; E. C. Boote, New York.

Armstrong Cork & Insulation Co., Lancaster, Pa. Booth E-30.

Exhibiting: Standard and special shapes of Armstrong's Nonpareil and E. F. insulating brick, also samples of these products coated with high temperature cement and also some samples faced with air proofing.

In attendance: S. M. Jenkins, assistant sales manager in charge of high temperature insulation; M. E. Pendleton, manager, Buffalo office; H. B. Dutton and F. E. Snyder, salesmen.

Aurora Metal Co., Aurora, Ill. Booth C-31.

Exhibiting: "Stronger than Steel" die cast aluminum bronze parts for printing presses, locomotive blow-off valves, outboard motors, ironing machines, power lawn mowers, counting machines, variable speed mechanisms, dish washing machines, electric switches, hose couplings, catenary hardware, spray guns, telephone equipment, electric hand saws and sanders, gasoline meters, milk bottle capping machines, machine guns, dump trucks, etc. Die cast aluminum bronze gear and worm blanks. Die cast silicon bronze enclosed type centrifugal pump impellers.

In attendance: John LeMay, vice-president and chief engineer. Sales representatives: Don Rennolds, Chicago; N. C. Failor, New York; Geo. M. Hessdoerfer, Philadelphia; H. L. Ritts, Detroit; E. W. Saunders, Cleveland; Clark P. Schumacher, St. Louis; Ogden R. Adams, Rochester.

Bausch & Lomb Optical Co., Rochester. Booth E-17.

Exhibiting (in operation): The large Littrow Quartz Spectrograph shown for the first time, which is particularly adapted for the analyses of iron and steel especially alloy steels, which give such exceedingly complex spectra that complete and accurate analysis is impossible with other than this type of large spectrograph. A density comparator rounds out the complete spectrographic line. This new development makes it possible to measure the

intensities of spectrum lines by means of which an accurate quantitative analysis of the highest order is possible. Another new instrument is the linear measuring microscope, primarily designed for the measurement of the position and width of various spectrum lines. In addition to its specific use in spectroscopy, it can be easily read to an accuracy of 0.0002". A new stereo camera and stereoscope for low power ortho stereoscopic photography will be displayed. This represents the first equipment with which stereoscopic photographs can be made with true proportions as between depth and width. A photo elastic polariscope, which is an equipment by means of which the points of strain and mechanical parts may be strikingly demonstrated by the use of celluloid models.

In attendance: I. L. Nixon, manager industrial sales division; M. H. Stevens, industrial sales representative; E. G. Koch, industrial sales representative; W. H. Slocum, industrial sales representative; C. C. Nitchie, spectrographic specialist; T. L. Bourne, Buffalo representative; W. A. Carter, Pittsburgh representative; H. L. Shipley, Detroit representative; H. F. Kurtz, member of scientific bureau; L. V. Foster, member of scientific bureau; M. Poser, special representative.

Bell & Gossett Co., Chicago. Booth G-12.**Bethlehem Steel Co., Bethlehem, Pa.** Booth D-18.

Exhibiting: A display of several of the new sections of Bethlehem wide flange structural shapes which are now being rolled, also a display of Bethlehem (Lackawanna) steel sheet piling sections, and samples of various grades of alloy steels in the "as rolled" and special finish conditions. Specimens of Nitralloy steel, including those that have been nitrided, indicating depth of case will be displayed. Specimens of bearing steel will be shown. The exhibit will also include samples of corrosion resisting steel. Parts illustrating the various grades of Bethlehem will be shown as well as parts made of Bethlehem, Bethlehem's free-machining corrosion-resisting steel. Among other items will be Bethlehem Superior hollow drill steel, rolled gear blanks and fly wheel blanks, pictures of boiler drums and a group of airplane forgings and cylinders.

In attendance: R. S. Tucker, manager of alloy steel sales; D. C. Roscoe, manager of tool steel sales; J. C. Miller, manager of bolt and nut sales; A. B. Cunningham, salesman; W. J. Curry, contact man; F. N. Baldwin, salesman; Theodore Herman, exhibit man; members of Buffalo sales office.

Brace-Mueller-Huntley, Inc., Buffalo. Booth C-19.

Exhibiting: Tools and dies—representing applications of principal Ludlum tool steels,—among these are L-XX high speed steel, Deward and Huron die steels, Ontario air-hardening steels, Seminole chisel steel and Pompton carbon tool steel. Other features will include Super Panther cobalt tool bits, Carmet tungsten carbide tools and dies, drill rod and cold drawn specialties and L-XX high speed steel forgings.

In attendance: A. F. Dohn, vice-president and sales manager; C. B. Templeton, assistant to president; F. B. Lounsbury, vice-president and works manager, Ludlum Steel Co.; Maxwell Brace, president, Brace-Mueller-Huntley, Inc.; O. W. Mueller, W. B. Huntley, W. H. Wills, W. T. Casey, W. L. Weaver.

Buffalo, Niagara and Eastern Power Corp., Buffalo. Booth F-5.

Exhibiting: Photographs of representative electric furnace and other electric heating installations in the Buffalo territory. The booth is primarily for the convenience of visitors who desire information on electrical applications.

In attendance: E. M. Hooker, industrial power representative; T. I. Messenger, power engineer; H. L. MacIntire, electric heating specialist; E. A. Tillman, electric heating specialist; C. P. Yoder, industrial heating engineer.

Carboloy Co., Inc., Detroit. Booth F-25.

Exhibiting: Carboloy tools—Display of three methods whereby the user can save on the cost of cemented carbide tools. This includes "milled and brazed" tools complete except for finished grinding. "Brazed only" tools—a further method of economical purchase, and a visual display of a simplified method which the user can employ to manufacture his own Carboloy tools. Carboloy dies—A display of the manufacturing methods used in making Carboloy dies from the raw metal through to the moulded nib shaped close to finished size. Also a display of the various stages in the manufacture of Carboloy cemented carbide metal from the raw material to the hardened form.

In attendance: W. G. Robbins, general sales manager; F. C. Ritner, assistant sales manager; A. A. Merry, district manager; A. H. Godfrey, assistant district manager; P. W. Weiser, engineer; E. C. Howell, advertising manager.

Carborundum Co., Niagara Falls, N. Y. Booths D-29 and D-31.

Exhibiting (in operation): An interesting and complete exhibit of abrasive and refractory products. The abrasive division will show a representative line of Carborundum and Aloxite brand grinding wheels for the grinding of steel billets, castings, etc.; Carborundum and Aloxite brand cut-off wheels for the cutting, sawing and notching of all types of metal; Carborundum and Aloxite brand mounted points and wheels, polishing grains, and there will also be an interesting exhibit of Carborundum brand green grit wheels put out especially for the grinding of tungsten carbide. There will also be a decidedly practical demonstration of the cutting ability and economy of Carborundum and Aloxite brand cut-off wheels, these wheels being demonstrated on an entirely new type of cut-off machine. In the refractory division will be an elaborate exhibit of "Carbofrax" muffles, hearths, brick, pyrometer tubes and other refractory products made from "Carbofrax," the Carborundum brand silicon carbide refractory. A series of enlarged photographs will be used in demonstrating some of the improved features of the Carborundum Company's recuperator.

In attendance: Abrasive Division—S. F. Courter, general sales manager; F. D. Bowman, advertising manager; G. W. Chormann, sales engineer; B. H. Work, sales engineer; A. H. Prey, sales engineer; G. S. Rogers, sales representative; F. W. Bonacker, sales representative; G. J. Houston, sales representative. Refractory Division—C. E. Hawke, general sales manager; S. A. Fenno, district sales manager; J. A. King, sales representative; R. A. Barr, sales representative.

Case Hardening Service Co., Cleveland. Booth G-12.**Chemical Catalog Co. See Metals & Alloys.****Chicago Steel Foundry Co., Chicago.** Booth B-6.

Continued on Page Three

30 PAPERS LISTED ON A.S.S.T. PROGRAM AT NATIONAL METAL CONGRESS OCTOBER 3-7

More Time Allowed for Written and Oral Discussion

Monday, Oct. 3

10:00 a.m.—Ballroom, Hotel Statler

Session on Heat Treating of Steel

OBSERVATIONS ON THE EFFECT OF NORMALIZING MEDIUM MANGANESE STEELS ON THE MICRO-STRUCTURE AND PHYSICAL PROPERTIES, by C. R. Austin, Westinghouse Electric & Mfg. Co., East Pittsburgh.

SCALING OF STEEL AT HEAT TREATING TEMPERATURES, by Clair Upthegrove and D. W. Murphy, University of Michigan, Ann Arbor.

A LOW INTERNAL STRESS HEAT TREATMENT, by Charles W. Briggs, U. S. Naval Research Laboratory, "Bellevue," Anacostia, D. C.

2:30 p.m.—174th Regiment Armory

Session on Deep Etch Testing

DEVELOPMENT AND APPLICATION OF MACRO-ETCHING, by H. G. Keshian, Chase Companies, Inc., Waterbury, Conn.

PREPARATION OF SPECIMENS FOR DEEP ETCHING, ETCHING REAGENTS, TIME AND TEMPERATURE OF ETCHING, by M. Yatskevitch, Watertown Arsenal, Watertown, Mass.

ROUTINE DISK INSPECTION IN QUALITY STEEL MANUFACTURE, by G. V. Luerssen, Carpenter Steel Co., Reading, Pa.

AN INTERPRETATION OF THE DEEP ACID ETCH TEST AS APPLIED TO TOOL STEELS, by J. P. Gill and H. G. Johnston, Vanadium Alloys Steel Co., Latrobe, Pa.

Tuesday, Oct. 4

10:00 a.m.—Ballroom, Hotel Statler

Session on Research

TRANSFORMATION IN THE CARBIDE PHASE DURING GRAPHITIZATION, by H. A. Schwartz, National Malleable & Steel Castings Co., Kent R. Van Horn, Aluminum Co. of America, and C. H. Junge, National Malleable & Steel Castings Co., Cleveland.

THE ROLE OF NICKEL IN NITRIDING STEELS, by H. J. French, International Nickel Co., New York City and V. O. Homerberg, Massachusetts Institute of Technology, Cambridge.

CREEP CHARACTERISTICS OF METALS AT ELEVATED TEMPERATURES, by A. E. White, and C. L. Clark, University of Michigan, Ann Arbor.

2:30 p.m.—174th Regiment Armory

Session on Drop Forging

FURTHER EXPERIMENTS ON THE FORGEABILITY OF STEEL, by O. W. Ellis, Ontario Research Foundation, Toronto.

BEHAVIOR OF STEEL IN SULPHUR-CONTAINING ATMOSPHERES AT FORGING TEMPERATURES, by D. W. Murphy, University of Michigan, Ann Arbor.

HEATING STEEL FOR FORGING, by R. E. Waldron, Dominion Forge & Stamp- ing Co., Walkerville, Ont., and N. L. Deuble, Republic Steel Corp., Massillon, O.

DROP FORGING PRACTICE, by Adam Steever, Great Lakes Forge Co., Chicago.

Wednesday, Oct. 5

10:00 a.m.—Ballroom, Hotel Statler

Annual Meeting—American Society for Steel Treating.

Campbell Memorial Lecture—FACTORS AFFECTING THE INHERENT HARDEN- ABILITY OF STEEL, by Edgar C. Bain, Research Laboratories, U. S. Steel Corp., Kearny, N. J.

2:30 p.m.—174th Regiment Armory

Session on Sheet and Strip Steel

FACTORS INFLUENCING THE ANNEALING OF COLD ROLLED STRIP STEEL, by G. R. Brophy and L. L. Wyman, General Electric Co., Schenectady.

AUTOGRAPHIC STRESS-STRAIN CURVES OF DEEP-DRAWING SHEETS, by Reid L. Kenyon and Robert S. Burns, American Rolling Mill Co., Middletown, O.

PRINCIPLES OF LUBRICATION IN COLD DRAWING SHEET STEEL, by H. A. Mont- gomery, H. A. Montgomery Co., Detroit.

AGE HARDENING IN LOW CARBON STRIP STEEL, by Earle B. Whittemore, Wickwire Spencer Steel Co., Worcester, Mass.

Thursday, Oct. 6

10:00 a.m.—Ballroom, Hotel Statler

Session on High Speed Steels

COBALT TUNGSTEN SYSTEM, by W. P. Sykes, General Electric Co., Cleveland.

THE TEMPERATURE ATMOSPHERE PROBLEM IN HIGH SPEED STEEL, by Sam Tour, Lucius Pitkin, Inc., New York.

SOME MOLYBDENUM HIGH SPEED STEELS, by J. V. Emmons, Cleveland Twist Drill Co., Cleveland.

2:30 p.m.—174th Regiment Armory

Research Session

ALLOTROPY IN IRON AND STEEL, by R. H. Harrington, General Electric Co., Schenectady, N. Y., and Wm. P. Wood, University of Michigan, Ann Arbor.

HARDENING TRANSFORMATION IN MANGANESE STEELS, by Howard Scott and J. G. Hoop, Westinghouse Electric & Mfg. Co., East Pittsburgh.

Friday, Oct. 7

10:00 a.m.—Ballroom, Hotel Statler

Research Session

A SIMPLE CUTTING TOOL FOR MEASURING PRESSURES IN THE DIRECTION OF CUT, by O. W. Boston and C. E. Kraus, University of Michigan, Ann Arbor.

ALLOYS OF IRON, MANGANESE AND CARBON, by Francis M. Walters, Cyril Wells, John F. Eckel and V. N. Krivobok, Carnegie Institute of Technology, Pittsburgh.

INTERNAL FRICTION IN IRON AND IRON ALLOYS, by R. S. Canfield, U. S. Naval Research Laboratory, "Bellevue," Anacostia, D. C.

2:30 p.m.—174th Regiment Armory

Session on Corrosion Resisting Steels

MANUFACTURE OF STAINLESS STEELS, by E. R. Johnson and Robert Sergeson, Republic Steel Corp., Massillon, O.

DESIGN OF HEAT RESISTING ALLOY MEMBERS AND THEIR PERFORMANCE IN THE FIELD, by Ralf S. Cochran, Surface Combustion Corp., Toledo, O.

CORROSION RESISTANCE OF CHROMIUM-IRON ALLOYS IN VARIOUS MEDIA—THE SALT SPRAY TEST, by Wm. B. Arness and J. N. Ostrofsky, Alloy Research Corp., Baltimore.

CONGRESS & EXPOSITION PLANS

(Continued from Page One)

Three papers were scheduled on each session in order to allow more time for the presentation of written and oral discussion.

The complete technical programs of all societies are printed on other pages.

Throughout fourteen years, the National Metal Congress and Exposition have been recognized as the prime educational events in the metal industries.

AJAX AMMONIA DISSOCIATOR

An electric ammonia dissociator has been developed by the Ajax Electric Co., Philadelphia. This apparatus yields a dry gas containing 75% hydrogen and 25% nitrogen. Due to the purity of the raw material (anhydrous ammonia) the gas produced is not contaminated. A standard cylinder of 100 lbs. ammonia will yield 4500 cu. ft. of dissociated gas. Ajax Electric Co. is now offering these electric ammonia dissociators in the following standard sizes—50, 150, 300 and 500 cu. ft. per hr. capacity.

FOXBORO DEVELOPS SWITCH

A simple, compact pneumatic switch has been designed by Foxboro Co., Foxboro, Mass., for use with their standard temperature and pressure controllers. This switch makes possible the use of air-operated controllers on equipment controlled by turning on and off an electric current. It has been used successfully to control temperatures in electrically heated ovens, to control motor operated pumps, blowers and compressors, and as a means of producing audible or visible signals on time cycle applica-

The switch is a standard single pole mercury type switch mounted in a small cast-iron housing with an outlet tapped for either conduit or BX connector. In conjunction with suitable auxiliary magnetic switches, it may be used in any circuit where the current is not higher than 600 amperes at 220 volts. The switch is operated by a small diaphragm motor mounted directly on the housing. The standard switch is closed by air pressure from the control instrument and opened by a spring. The switch is always open, therefore, when the air is off.

What Exhibitors Will Show

Continued

Cling Surface Co., Buffalo. Booth E-12.

Exhibiting (in operation): Two belt driven generators, 100 watt capacity, loaded by separate banks of lamps, from a common shaft by a ½ h.p. motor. The lamps show a vivid comparison between the belt treated with Cling-Surface and the one not so treated, the Cling-Surface treated belt being run slack with no slip, and the untreated one showing considerable slip even though run tight. Tension on the belts may be read at any time by means of spring balances attached to the movable carriages on which the generators are mounted.

In attendance: G. N. Parker, vice-president; Chas. G. Gessner, treasurer.

Columbia Tool Steel Co., Chicago. Booth C-7.

Dearborn Chemical Co., Chicago. Booth E-35.

Exhibiting: Dearborn complete water treatment service—A specialized treatment for every type of water, to correct scale, corrosion, embrittlement, foaming. Dearborn brine treatment, to correct corrosion in sodium and calcium brine. No-Ox-Id—the original rust preventive, to meet industrial requirements. No-Ox-Id Primer. No-Ox-Id Fillers red, gray, and black. No-Ox-Id-ized wrappers. Dearborn Cleaner No. 7 for drains, and other powdered cleaners for industrial use. High grade lubricants.

In attendance: E. M. Converse, manager industrial department; C. A. Remsen, eastern representative; W. N. Malcolm, eastern representative.

Dow Chemical Co., Midland, Mich. Booth F-7.

Exhibiting: A large display of Dowmetal parts including sand and die castings, forgings, extruded shapes, and sheet as well as a number of fabricated articles, such as foundry flasks, bakers peels, couplings and many others.

In attendance: L. B. Grant, manager, Dowmetal sales; W. F. Stumpf, Dowmetal sales.

Eisler Electric Corp., Newark, N. J. Booth G-23.

Exhibiting (in operation): Spot welders and oil burners.

In attendance: M. A. Fox, advertising, promotional director.

Electro Metallurgical Co., New York. Booths E-1, D-6, E-7.

Electro Refractories & Alloys Corp., Buffalo. Booth F-20.

Ensign-Reynolds, Inc., New York. Booth Gas Section.

Erie Malleable Iron Co., Erie, Pa. Booth E-21.

Falls Electric Furnace Corp., Buffalo. Booth E-10.

Firth-Sterling Steel Co., McKeesport, Pa. Booth D-23.

Exhibiting (in operation): Firthite cemented carbide tools and Firthalloy cemented carbide drawing and extrusion dies. In connection with the dies, a machine for finishing the cemented carbide nibs will be displayed in operation. Also specimens of products made from tool, alloy, and stainless steels and drill rod.

In attendance: L. Gerald Firth, general manager; D. G. Clark, director of sales; O. K. Parmiter, metallurgical engineer; G. J. Comstock, director of research; Gunther A. Jacobs, Detroit district manager; A. E. Baker, New York district manager; H. I. Moore, Hartford district manager; G. W. Frick, Jr., Cleveland district manager; A. R. Zapp, manager Firthalloy division; M. F. Judkins, Firthite engineer; Henry Elias, Firthalloy division; D. M. Smith, Firthite engineer; R. F. Kimber, E. W. Nelson, T. A. Larecy, F. G. Davis, H. E. Lennon, representatives; C. G. Thoma, advertising manager.

Gas Machinery Co., Cleveland. Booth Gas Section.

Exhibiting: A space to be occupied by friends and company officials.

In attendance: W. E. Steinwedell, president; B. G. Harmon, vice-president; Theo. Schilling, engineer; Wm. Steinwedell, sales engineer.

Gathmann Engineering Co., Baltimore. Booth C-22.

General Alloys Co., Boston, and Champaign, Ill. Booth D-1.

Exhibiting: Nickel-chromium alloy, Q-Alloys; carburizing and annealing containers; cyanide and lead pots; furnace hearths, roller rails, heat and acid resisting chain, cyanide dipping baskets, recuperators, miscellaneous furnace parts, parts for every type heat treating furnace—carburizing, annealing, normalizing, hardening, tempering, forging, spheroidizing, tubes and retorts.

In attendance: H. H. Harris, president; G. C. McCormick, vice-president; R. D. Alger, general superintendent; W. R. Blair, engineer; J. J. Donovan, Western manager; B. F.

Continued on Page 4

CONTINUED LEADERSHIP IN THE MAKING OF SPECIAL PURPOSE STEELS

SINCE the introduction of the first Agathon Steels in the early days of the alloy industry, the leadership of their sponsor in the field of fine alloy making has never been questioned.

Continued research has kept Republic apace with the needs of industry, so that today this organization, with a skill and experience unquestionably without parallel, is the world's largest producer of quality alloy steels.

Agathon Alloy Steels are made in both electric and open hearth furnaces in all combinations of alloying elements and are supplied in ingots, billets, hot rolled, heat treated or cold drawn bars, sheets and strip, and in die rolled and special shapes.

Two other developments of Republic worthy of special mention are ENDURO Stainless Steel made in a wide variety of analyses to fit every need, and Toncan Copper Molybdenum Iron, an alloy that ranks first among the ferrous materials in its resistance to rust, after the stainless irons and steels, and that has, because of its price advantage, a wide application in industry in the form of sheets, plates, strip and pipe.

Republic maintains a staff of metallurgists whose business it is to take your problems and solve them. A letter will place their services at your disposal.

CENTRAL ALLOY DIVISION

REPUBLIC STEEL CORPORATION

MASSILLON, OHIO



ENDURO
REPUBLIC'S PERFECTED
STAINLESS STEEL

TONCAN
COPPER MOLYBDENUM
IRON



Complete Program for the Events Arranged by A. I. M. E.

Tuesday, Oct. 2

9:00 a.m. to 5:00 p.m.—Registration and Information—Headquarters, Parlor C, Mezzanine Floor, Hotel Statler.

Wednesday, Oct. 3

9:00 a.m.—Registration—Parlor C, Mezzanine Floor, Hotel Statler.
2:00 p.m.—Institute of Metals Technical Session—Georgian Room
Associate chairmen—Sam Tour and W. A. Scheuch.
A STUDY OF SEGREGATE STRUCTURES IN COPPER-TIN AND SILVER-ZINC ALLOYS, by Dana Smith.

COPPER EMBRITTLEMENT, II, by L. L. Wyman.
PROPERTIES OF COPPER DEOXYDIZED WITH CALCIUM, by Lyall Zickrick.
2:00 p.m.—Iron and Steel Technical Session—Chinese Room
Associate chairmen—G. B. Waterhouse and J. T. Mackenzie.
EFFECTS OF INCLUSION STREAKS ON THE TENSILE AND DYNAMIC PROPERTIES OF WROUGHT IRON AND SIMILAR MATERIALS, by F. R. Hensel and T. F. Hengstenberg.

EFFECT OF SMALL PERCENTAGES OF CHROMIUM ON THE QUALITY OF CAST IRON, by C. O. Burgess.

ANALYSES OF INCLUSIONS IN HIGH-CARBON TOOL STEELS, by Haakon Styri.
6:30 p.m.—Chinese Room, Hotel Statler
Joint Institute of Metals and Iron and Steel divisions Dinner, Speaker, Dr. Zay Jeffries—Non-Technical talk on TUNGSTEN.

Thursday, Oct. 4

9:00 a.m.—Registration, Parlor C, Mezzanine Floor, Hotel Statler
9:30 a.m.—Institute of Metals Technical Session—Georgian Room
Associate chairmen—E. M. Wise and A. J. Phillips.
DIRECTIONAL PROPERTIES IN COLD ROLLED AND ANNEALED COMMERCIAL BRONZE, by Arthur Phillips and C. H. Samans.

EARS ON CUPRONICKEL CUPS, by W. H. Bassett and J. C. Bradley.
SOME EFFECTS OF INTERNAL STRESS ON PROPERTIES OF DRAWN BRASS TUBES, by D. K. Crampton.

12:30 p.m.—Executive Committee Luncheon, Iron and Steel division, Parlor A
12:30 p.m.—Executive Committee Luncheon, Institute of Metals, Parlor B

2:00 p.m.—Chinese Room, Hotel Statler
Institute of Metals and Iron and Steel divisions—Joint Session
Associate chairmen—R. F. Mehl and F. N. Speller.

Theoretical Metallurgy

THE COPPER RICH ALLOYS OF THE COPPER-NICKEL-TIN SYSTEM, by John T. Eash and Clair Upthegrove.

INTERMEDIATE PHASES OF THE IRON-TUNGSTEN SYSTEM, by W. P. Sykes and Kent R. Van Horn.

4:00 p.m.—Chinese Room—Science Lecture
C. H. Mathewson, chairman, Institute of Metals division, and F. N. Speller, chairman, Iron and Steel division, associate chairmen.

NEW VACUUM VALVES AND THEIR APPLICATIONS, by A. W. Hull, Research Laboratory, General Electric Co.

A. S. M. E. Technical Sessions Are Planned for Oct. 3

Monday, Oct. 3

9:30 a.m.—Hotel Statler. Society of Automotive Engineers Production Meeting
12:00 M.—Hotel Statler.

Joint Luncheon of the American Society of Mechanical Engineers and Society of Automotive Engineers.

ADJUSTING EQUIPMENT POLICIES TO MEET CHANGING CONDITIONS, by Kenneth H. Condit, editor, American Machinist.

2:30 p.m.—Technical Session—Hotel Statler
Presiding officer—Thomas Githens, Cleveland Twist Drill Co., Cleveland.
INFLUENCE OF OIL COMPRESSIBILITY ON SPEED CHARACTERISTICS OF HYDRAULIC HIGH SPEED PRESSES, by Walter Ernst, Hydraulic Press Mfg. Co., Mt. Gilead, O.

TORQUE REQUIRED TO TAP CAST IRON USING NATIONAL COARSE THREAD SERIES AND NATIONAL FINE THREAD SERIES TAPS, by J. E. Miller, Alden, Iowa.
RECENT TRENDS IN MACHINE TOOL DESIGN, by Guy Hubbard, formerly associate editor of Steel.

8:00 p.m.—Technical Session—Hotel Statler
TECHNIQUE OF SIZE CONTROL IN PRECISION GRINDING, by R. E. W. Harrison, formerly chief engineering director of Cincinnati Grinders Co., Cincinnati.
DESIGN OF PRODUCTS TO UTILIZE DIE CASTINGS OF MACHINED PARTS, by L. H. Morin, Doehler Die Casting Co., New York.

MATERIALS FOR MODERN CUTTING TOOLS, by J. V. Emmons, Cleveland Twist Drill Co., Cleveland.

Three Papers Sponsored by S. A. E. for Session Oct. 3

Monday, Oct. 3

10:00 a.m.—Technical Session, Hotel Statler
Convened by R. F. Peo, Houde Engineering Corp.

Chairman—F. A. Cornell, Electro Devices Corp.
WHAT MANUFACTURING EQUIPMENT IS REQUIRED TO MEET THE AUTOMOTIVE DESIGNER'S NEEDS, by L. F. Maurer, Pierce Arrow Motor Car Co., and Alex Taub, Chevrolet Motor Co.

CURRENT APPLICATIONS OF CEMENTED CARBIDE TOOLING (With film), by R. D. Prosser, Thos. Prosser and Son.

SPECIAL ZINC ALLOYS IN DIE-CASTINGS (Premier showing of film), by C. R. Maxon, New Jersey Zinc Co.

12:30 p.m.—Joint Luncheon Meeting with A.S.M.E.
Chairman—M. A. Thorne, chairman Buffalo Section, S.A.E.
Chairman—Joseph Geschelin, chairman, S.A.E. Production Meetings Committee.

Plan Fine American Drop Forging Institute Program

Tuesday, Oct. 4

2:00 p.m.—174th Regiment Armory
Joint Meeting with American Society for Steel Treating
FURTHER EXPERIMENTS ON THE FORGEABILITY OF STEEL, by O. W. Ellis, Ontario Research Foundation.

DROP FORGE PRACTICE, by Adam Steever, Great Lakes Forge Co., Chicago.
HEATING STEEL FOR FORGING, by R. E. Waldron, Dominion Forge and Stamp- ing Co., Walkerville, Ont., Canada, and N. L. Deuble, Republic Steel Corp., Massillon, O.

BEHAVIOR OF STEEL IN SULPHUR-CONTAINING ATMOSPHERES AT FORGING TEMPERATURES, by D. W. Murphy, University of Michigan, Ann Arbor.

7:00 p.m.—Parlor B, Hotel Statler—Director's Meeting

Wednesday, Oct. 5

9:45 a.m.—Georgian Room—Hotel Statler
INDUSTRY'S CHALLENGE TO TRADE ASSOCIATIONS, by C. H. Smith, president, American Drop Forging Institute.

DISCUSSION OF SURVEY MADE BY UNITED STATES DEPARTMENT OF COMMERCE, by J. B. Sehl, cost agent, American Drop Forging Institute.

What Exhibitors Will Show (Continued)

Harris, Chicago representative; A. L. Grinnell, Detroit representative; G. J. Hawkey, Cleveland representative; Edw. W. Voss, Pittsburgh representative; R. M. Kirk, New York representative; Ralph Hare, New England representative.

Glohar Corp., Niagara Falls, N. Y. Booths D-29 and D-31.

Grasselli Chemical Co., Cleveland. Booth D-26.

Exhibiting (in operation): Many iron and steel and other metal products which have been processed by Grasselli products and processes. Part of this exhibit will be devoted to displaying the value and application of cadmium and zinc in its various forms for the protection of metal against rust and corrosion. A complete display of Grasselli fluxes, crystal and liquid, for the galvanizing, tinning, and soldering industries will be exhibited. Of special interest should be the display of Grasselli inhibitors. Demonstrations of pickling iron and steel in hot sulphuric acid solutions with and without inhibition will be carried on during the entire week of the exhibit. Many different grades and kinds of steel obtained from various mills will be pickled during these demonstrations. As pickling will be done in glass beakers, the efficiency of Grasselli inhibitors in preventing acid attack and hydrogen evolution will be plainly visible to those viewing the demonstration.

In attendance: T. G. Crabbe, sales representative; C. M. Hoff, zinc sales department; Myron Thomas, experimental laboratory; H. G. Hobbs, experimental laboratory; H. H. Blouch, zinc sales department; W. F. Harrison, sales representative.

Harnischfeger Corp., Milwaukee. Booth F-12.

Exhibiting (in operation): A ¼ ton hoist in action, a 300 ampere and a 100 ampere modern P & H Hansen arc welder. The arc welders shown there embody several new improvements which further increase the inherent wide welding range of this unit. The new short circuit winding and the newly developed magnetic bridges also improve the stability and deep penetration characteristics of the arc. Further improvement is the consolidation of the starting box, voltage and ampere meters, and terminal posts in one compact unit. Its simplicity and compactness make it impossible for the reading meter and starting box to become damaged or dented.

In attendance: G. L. Drake, manager of hoist and welder sales; D. B. Patterson, vice-president; K. L. Hansen, consulting engineer and designer of the welder.

Haynes Stellite Co., Kokomo, Ind. Booths E-1, D-6, and E-7.

Heppenstall Co., Pittsburgh. Booth D-22.

Exhibiting (in operation): Hardtem razor blade exhibit; Kleenkut shear knives; cross section of a full sized ingot. Hardtem razor blade samples will be distributed.

In attendance: J. A. Succop, chief of research; O. W. Mueller, Buffalo sales manager; B. B. Weinberg, vice-president; A. J. Porter, Jr., sales manager, Bridgeport Heppenstall Co.

Hevi Duty Electric Co., Milwaukee, Wis. Booth G-10.

Exhibiting (in operation): Heat treating equipment, showing developments made during the last year.
In attendance: H. E. Koch, research engineer; F. J. Condit, district manager, Buffalo; J. S. Ayling, Cleveland representative.

Hollup Corp., Chicago. Booth C-2.

Hones, Inc., Charles A. Baldwin, N. Y. Booth Gas Section.

Exhibiting (in operation): Industrial gas burners including ring burners, pipe burners, nozzle burners, etc., operating at atmospheric pressures, also soft metal furnaces, small bench furnaces, cleaning tank.

In attendance: Charles A. Hones, president; William R. Hones, vice-president; Charles J. Hones, secretary.

Houghton and Co., E. F. Philadelphia. Booth D-17.

Exhibiting: Latest developments in carburizers, cutting oils, quenching oils, heat treating salts, rust preventives, drawing and stamping compounds and metal cleaners. Several new books on heat treating will be distributed to the public for the first time at this show.

In attendance: George W. Pressell, general sales manager, Philadelphia; H. E. Cressman, assistant general sales manager, Chicago; A. G. Elsby, sales manager, Cleveland; C. E. Kite, district manager, Buffalo; D. D. Kelsey, district manager; Geo. L. Smith, district manager, Rochester; W. A. Fletcher, district manager, Cleveland; I. D. Fletcher, district manager, Toledo; S. T. Dolan, district manager, Syracuse; J. N. Huff, district manager, Schenectady; H. E. Martin, district manager, Detroit; L. C. Dunn, district manager, Detroit; D. J. Richards, district manager, Pittsburgh; A. A. Miller, district manager, Indianapolis; C. H. Stonerod, district manager, Toronto, Ontario; V. W. Wells, advertising manager, Philadelphia.

Illinois Steel Co., Chicago. Booth B-10.

Exhibiting: Various finished products manufactured from USS stainless and heat resisting steels.

In attendance: W. I. Howland, Jr.; L. B. Worthington, John B. Hammond, C. R. Moffatt, Fred C. Deming, Elmer E. Price.

Illinois Testing Laboratories, Chicago. Booth A-21.

International Nickel Co., Inc., New York. Booth E-29.

Exhibiting: Important applications of nickel alloys. Members of our Development and Research Department will be in attendance to discuss with visitors to the exhibition their problems in connection with the use of nickel alloy steels, nickel cast iron and nickel in non-ferrous alloys.

In attendance: T. H. Wickenden, assistant manager development and research department; Charles McKnight, assistant manager, nickel sales department; H. J. French, in charge of alloy steel development; H. S. Lewis, nickel sales department; A. G. Zima, development and research department; J. S. Vanick, development and research department; Robert Worthington, development and research department.

Iron Age, New York. Booth B-16.

Exhibiting: Current issues of Iron Age.

In attendance: F. J. Frank, president; J. H. VanDeventer, editor; W. W. Macon, consulting editor; G. L. Lacher, managing editor; C. G. Wright, news editor; E. F. Cone, associate editor; R. E. Miller, associate editor; R. A. Fiske, Chicago editor; F. L. Prentiss, Cleveland editor; Burnham Finney, Detroit editor; T. H. Gerken, Pittsburgh editor; C. S. Baur, general advertising manager; H. E. Leonard, advertising department; Oliver Johnson, advertising department; B. H. Hayes, advertising department; H. K. Hottenstein, Western representative; W. B. Robinson, Pittsburgh representative; Emerson Findley, central western representative; Chas. Lundberg, Philadelphia representative.

sentative; B. L. Herman, Western New York State representative; Peirce Lewis, Detroit and Cincinnati representative; D. C. Warren, New England representative; W. C. Sweetser, New Jersey representative; C. H. Ober, New York representative; A. H. Dix, subscription manager.

Jewell Steel & Malleable Co., Buffalo. Booth No. B-4.

Exhibiting: A display of castings in Jewell Alloy, a heat and abrasive resisting ductile alloy white iron of 85,000 lbs., tensile strength. Furnace and kiln castings, stoker parts and grate bars, glass molds—die casting nozzles, compressor and governor parts, grinding pan bottoms, paddles and plows. Machine tool top slides, ways carriages, etc., and many kindred castings.

In attendance: C. M. Beattie, president; J. H. Schuler, vice-president, sales; R. T. Rycroft, vice-president, production; M. E. Jacobs, secretary and treasurer; A. B. Meissner, sales; L. E. Wolff, engineering; F. J. Poorten, sales; L. J. Glor, production.

Jones & Laughlin Steel Corp., Pittsburgh. Booth E-18.

Exhibiting: Practically the complete line of steel products manufactured by the Jones & Laughlin Steel Corp. Presented against an attractive, illuminated background containing oil paintings depicting various J & L operations. Products to be featured by J & L include Jalcase steel, hot rolled and cold finished; J & L cold finished bessemer screw steel, J & L special high sulphur bessemer screw steel and J & L S.A.E. 1020, J & L S.A.E. 1120 and J & L S.A.E. 1045 steels. These products will be represented by sample bars, test specimens and examples of their uses by various manufacturers. There will also be comprehensive displays of J & L turned and ground shafting, J & L wide cold rolled flats, J & L standard spring wire, J & L cold heading wire, J & L coke tin plate and J & L black plate in various finishes. The other products represented in the display will include J & L steel pipe, J & L junior beams, J & L light weight channels, J & L steel piling, J & L diamond bars for concrete reinforcement and J & L merchant wire products.

In attendance: William B. Todd, general manager of sales, Pittsburgh; J. Davis Allen, manager of sales, cold finished steel, Pittsburgh; R. T. Rowles, manager of sales, hot rolled department, Pittsburgh; A. A. Wagner, assistant manager of sales, hot rolled department, Pittsburgh; C. F. Gold, district sales manager, Buffalo; J. O'H. Anderson, district sales office, Buffalo; R. J. Swartz, district sales office, Buffalo; W. B. Herzog, district sales office, Buffalo; R. W. Light, district sales office, Detroit; H. W. Graham, general metallurgist, Pittsburgh; C. F. Goldcamp, metallurgical engineer, Pittsburgh; C. C. Henning, metallurgical engineer, Pittsburgh; S. L. Case, research supervisor, Pittsburgh.

Kelley Co., J. W., Cleveland. Booth G-21.

Exhibiting: Carburizing compound; tempering salts and industrial oils.

In attendance: J. W. Kelley, president; B. O. Platell, A. F. Ruffner, H. M. Webb, D. D. Reed.

Kelley-Koett Mfg. Co., Covington, Ky. Booth B-33.

Kemp Mfg Co., C. M., Baltimore. Booth Gas Section.

Exhibiting (in operation): Gas and air premixing apparatus, immersion heating for soft metals, all types industrial gas burning equipment.

In attendance: Wm. Hunt, research engineer; E. B. Dunkak, sales manager; W. M. Ponder, sales engineer; R. S. Van Note, sales engineer.

Lebanon Steel Foundry, Lebanon, Pa. Booth E-15.

Exhibiting: Electric furnace steel castings of our regular Circle L normal carbon type. A line of Circle L alloy steel castings for high stresses and wear resistance. Circle L stainless steel alloy castings for corrosion resistance and heat resistance. Case carburized castings. Nitrided castings. Test bars of our various cast steels.

In attendance: W. H. Worrlow, president; T. V. Blodgett, sales manager; P. E. Gerhard, sales engineer; A. J. McDonald, district sales manager; J. L. Blackledge, district sales manager; A. C. Jones, research engineer.

Leitz, Inc., E., New York. Booth C-6.

Exhibiting (in operation): Leitz large Micro-Metallograph with arrangement for observations for polarized light as well as darkfield condenser. New optical equipment especially designed for observation in reflected light. Simplified Micro-Metallograph for routine laboratory use and other metallographic microscopes. New improved model of Guthrie-Leitz grinding and polishing machine both in single and double spindle type. New Leitz Ultrapaque illuminator. A complete line of metallographic accessories for grinding, polishing and laboratory investigations. Leitz autofocal Leica camera Model D with built-in range finder and complete accessories.

In attendance: W. Zieler, manager of technical division; W. H. Kessel, sales department; S. Borell, sales department.

Lincoln Electric Co., Cleveland. Booth F-1.

Exhibiting (in operation): A complete automatic welding equipment for welding with the Shielded Arc. New "Shield-Arc" hand welders in operation. "Linc-Weld" motor in operation. A complete line of all welding supplies.

In attendance: A. F. Davis, vice-president; C. M. Taylor, vice-president; M. R. Taylor, welding technician; E. H. Bergstrom, welding technician; C. S. Freeman, district representative; J. S. Roscoe, district representative.

Linde Air Products Co., New York. Booths E-1, D-6, E-7.

Ludlum Steel Co., Watervliet and Dunkirk, N. Y. Booth C-19.

Exhibiting: See Brace-Mueller-Huntley.

Magnetic Analysis Corp., Long Island City, N. Y. Booth B-12.

Manhattan Rubber Mfg. Division, Passaic, N. J. Booth E-4.

Exhibiting (in operation): Rubber-bonded wheels grinding and finishing stainless steel welds. Thin wheels, 12" and 16" diameter, cutting off hardened steel drills, taps and reamers, metal tubing, bars, etc., on Campbell No. 20 cut-off machine. Cutting brick, asbestos board, etc., with 20x¾" wheels on DeWalt marble cutter.

In attendance: W. H. Steinberg, H. D. Gilbert, R. G. Brinkerhoff, representatives.

Marburg Bros., New York. Booth E-26.

Metal & Thermit Corp., New York. Booth A-25.

Exhibiting (in operation): Materials and equipment for Thermit welding. Will also exhibit Murex heavy mineral coated electrodes for all purpose. Will have an operating exhibit showing welds actually made with these electrodes.

In attendance: John B. Tinnon, sales manager; R. L. Browne, district manager; H. T. Thompson, district manager; C. D. Young, district manager.

Metallizing Co., Los Angeles.

Continued on Page Five

What Exhibitors Will Show

Continued

Metals & Alloys, Pittsburgh. Booth C-5.

Exhibiting: *Metals & Alloys*, "The Magazine of Metallurgical Engineering."
In attendance: H. W. Gillett, editorial director; Richard Rimbach, editor; Philip H. Hubbard, publishing director; Wm. P. Winsor, advertising manager.

Mill & Factory, New York. Booth F-21.

Exhibiting: The publication *Mill & Factory*.
In attendance: Harvey Conover, Jr., president; B. P. Mast, vice-president; Hartley W. Barclay, editor; E. M. Stanley, advertising director.

Minneapolis-Honeywell Regulator Co., Minneapolis, Minn., Wabash and Elkhart, Ind. Booth E-22.

Exhibiting (in operation): Motor operated valves for industrial furnaces, final safety shut-off valves, proportioning and Modutrol automatic control systems, geared motors for vent damper operation, temperature, pressure and combustion safety controllers, motorized valves for general purposes. Con-Tac-Tor mercury switches.
In attendance: R. L. Goetzenberger, manager industrial regulator division; J. E. Haines, industrial regulator sales engineer, New York office; L. E. Plum, industrial regulator sales engineer, Philadelphia office; C. W. Lugar, industrial regulator sales engineer, Cleveland office; J. E. Kelly, industrial regulator sales engineer, Detroit office; F. McTernan distributor, Buffalo; Earl Whitaker, industrial regulator sales engineer, Pittsburgh office.

Molybdenum Corp. of America, Pittsburgh. Booth D-20.

Exhibiting: All of the products of tungsten and molybdenum, both chemical and metallurgical.
In attendance: Marx Hirsch, president; Van Rensselaer Lansingh, vice-president; William H. Phillips, vice-president; Harold P. Furlong, Detroit district manager; Earl Steward, western district manager.

New Jersey Zinc Sales Co., Inc., New York. Booth D-10.

Exhibiting (in operation): Many of the newer and more unusual examples of die castings—both as castings and units of complete assemblies. This year our exhibit will include a bench lathe, the assembly of which includes 44 zinc die castings—gears, brackets, spindles, etc. Besides these exhibits of moderately heavy machinery made largely of zinc die castings there will be many assemblies of smaller pieces ranging from completely utilitarian to decorative objects. A complete exhibit of platings and enamel and lacquer finishes on zinc die castings will also be shown.

In attendance: M. L. Havey, general sales manager; A. E. Mervine, manager, metal division; W. P. Hardenbergh, Jr., assistant manager, metal division; F. C. Fuller, manager, slab metal sales; D. P. Brannin, metal division; C. R. Maxon, technical service; S. E. Maxon, technical service; W. W. Broughton, technical service; A. E. Bremble, technical service; R. Davison, manager, advertising division; R. L. Davis, advertising division.

North American Mfg. Co., Cleveland. Booth Gas Section.

Olsen Testing Machine Co., Tinius, Philadelphia. Booth E-23.

Exhibiting (in operation): Olsen universal testing machine—screw power—gear box drive, with lever-pendulum self-indicating dial and recording system. Olsen universal hydraulic motor driven testing machine, with lever-pendulum self-indicating dial and recording system. Universal hydraulic motor driven type testing machine with lever-pendulum self-indicating dial and recorder, for light tests. Olsen direct motor driven brinell hardness tester, Firth Hardometer equipment, Olsen direct motor driven recording type ductility testing machine, Warner reverse bend testing machine, M. I. T. folding endurance tester, verifying rings, strain gauges, extensometers, Olsen-Lundgren semi-automatic cradle type static-dynamic balancing machine.

In attendance: B. L. Lewis, T. L. Richards, C. R. Tait, B. E. Ohlson.

Otis Elevator Co., Buffalo. Booth B-27.

Exhibiting: Corrosion and heat resisting castings, salt bath containers and special alloy steel castings for oil refineries.
In attendance: W. F. Witzel, sales department; T. H. Burke, metallurgist and steel foundryman; E. E. Burk, production manager.

Pels & Co., Henry, New York. Booth G-25.

Penton Publishing Co., Cleveland. See *Steel*.

Railway Locomotive Co., Chicago. Booth B-18.

Exhibiting (in operation): The first showing of the Vapofier. One Model "B" Vapofier, the smallest size manufactured, having a capacity of from 50,000 to 300,000 B.t.u. per hour operating a steel treating furnace. Larger size Vapofiers with a display of different types and sizes of burners used, etc.

In attendance: M. C. Bates, W. M. Ryan, Jr., C. B. Faverty, E. W. Hanegan, K. C. Carter, M. K. Epstein.

Republic Steel Corp., Youngstown. Booth C-10.

Exhibiting: The wide range of applications and the most recent developments in the use of Agathon alloy steels and of Enduro stainless steels in modern industry. The Agathon alloy steels section will display airplane motors, a Diesel engine, airplane crankshaft, airplane master rod, airplane articulating rod, automotive free wheeling unit, automotive gears and pinions, a large display of ball and roller bearings in a wide range of sizes and illustrating varied types of applications, tool exhibits from leading manufacturers, a locomotive exhibit showing how and where Agathon alloy steels are used. The use of Republic electric weld pipe and of Toncan copper—molybdenum iron in industry will also be featured. The display of Enduro stainless steels, both of corrosion-resisting and of heat-resisting types, will indicate the growing trend toward the use of stainless steel by leading industries. Fabricated products and sections representing applications in the automotive, architectural, oil refining, chemical, dairy, hospital, restaurant, hotel and food industries fields will be particularly prominent. The largest stainless steel sheet ever produced will be seen in the exhibit.

In attendance: B. F. Fairless, executive vice-president; N. J. Clarke, vice-president in charge of sales; R. J. Wisor, vice-president in charge of operations; W. M. Neckerman, assistant vice-president in charge of operations; A. E. Walker, assistant vice-president in charge of sales; L. S. Hamaker, manager of sales promotion; J. M. Schlendorf, manager of sales—alloy steel division; Martin H. Schmid, assistant manager of sales—alloy steel division; Gordon Hess, assistant manager of sales—alloy steel division; E. C. Smith, chief metallurgist; M. J. R. Morris, chief metallurgical engineer, Central Alloy district; E. R. Johnson,

assistant chief metallurgical engineer, Central Alloy district; T. B. Davies, sales manager of Buffalo district; Robert S. Sergeson, metallurgist, Central Alloy district; N. L. Deuble, metallurgist, Central Alloy district; A. J. Wilson, metallurgist, Central Alloy district; C. H. Aiken, sales department, Upson division; J. S. Langston, manager of sales, Witherow die rolling division; R. V. Jones, assistant sales manager, Buffalo district; H. F. Converse, W. G. McKee, R. S. Smith, P. F. Reilly, M. J. Cauger, J. C. Ranney, sales department, Buffalo office.

Rinkle Krinkle Paper Co. See *Terkelsen Machine Co.*

Ripley Co., Cleveland. Booth B-35.

Roebing's Sons Co., John A., Trenton, N. J. Booth G-1.

Exhibiting: Welding wire and flat wire.
In attendance: A. E. Gaynor, salesman; G. W. Swan, salesman; Mr. Palmer, salesman; F. J. Maple, advertising manager; H. S. Swan.

Roessler & Hasslacher Chemical Co., Niagara Falls, N. Y. Booth C-33.

Exhibiting: Sodium cyanide, cyanide mixtures, and heat treating salts. Metallic sodium. A unit for demonstrating the electroplating of tin. Articles showing the application of cyanide in case hardening and electroplating.
In attendance: W. M. Gager, metallurgist; Dr. D. A. Holt, chemist; R. B. K'burg, chemist; W. J. Schneider, F. F. Oplinger, plating experts; F. J. Schumacher, J. J. Landy.

Selas Co., Philadelphia. Booth Gas Section.

Exhibiting (in operation): Small Selas machine for premixing gas and air in operation, supplying gas-air mixture to an assortment of burners recently designed and applied to industrial heating processes. Selas soldering system demonstrated with central premixing suitable for large production soldering, and with low pressure air for small installations. Gas heated moulding platen. Examples of industrial burner development by Selas engineering service for special production. Selas Spear Flame tips.

In attendance: F. Hess, vice-president; R. C. Jordan, Eastern district manager; F. H. Koepke, Detroit representative; N. H. Memory, New York district manager; E. A. Furkert, Chicago district manager; J. E. Kerns.

Spencer Turbine Co., Hartford. Booth A-18.

Exhibiting (in operation): For the first time, the new Spencer Turbo-compressors built of copper bearing metal. This does not constitute any change in design, nor does it materially extend the life of the unit under normal conditions of atmosphere and inspection. The use of copper bearing metal, however, does extend the life and usefulness of units that must be placed in service under severe conditions, both as to the exterior air and the air passing through the machine. This metal is now standard material for all sizes. The Spencer unit on exhibit will be in actual service, furnishing air for various gas fired ovens, furnaces and other equipment throughout the exhibit.

In attendance: F. A. Wright, special representative; H. H. Richardson, president; O. J. Dingee, service engineer; R. A. Brackett, sales manager.

Stark Tool Co., Waltham, Mass. Booth A-19.

Steel, Cleveland. Booth D-12.
Exhibiting: Copies of publications of the Penton Publishing Co., including technical books. This booth will be fitted up as a rest room which those attending the Exposition are invited to make their headquarters.

In attendance: E. L. Shaner, editor; E. F. Ross, associate editor; A. H. Allen, associate editor; J. D. Knox, associate editor; H. B. Veith, associate editor; G. O. Hays, business manager; S. H. Jasper, Pittsburgh manager; E. W. Kreutzberg, advertising representative; R. C. Jaenke, advertising representative; J. D. Pease, vice-president.

Steel Publications, Inc., Pittsburgh. Booth A-20.

Exhibiting: The publications, *Welding*, *Heat Treating & Forging*, *Blast Furnace & Steel Plant*.

In attendance: D. N. Watkins, D. S. Watkins, I. Stanley Wishoski, Charles Longenecker, L. R. Gurley, F. B. Yeager, H. M. Reich.

Struthers-Wells Co., Warren, Pa. Booth F-17.

Exhibiting: A pressure vessel electric fusion welded by our tempered arc process which was subjected to tests and stressed far beyond the elastic limit, and was permanently distorted without sign of failure in the weld; also a number of welded test specimens complying with Class I of the A.S.M.E. Unfired Pressure Vessel Code and a number of specimens that have been destructive tested in accordance with Code requirements. These specimens will be in a wide range of thicknesses, probably up to 4". Also a number of electric welded specimens in alloy steels such as straight chrome, chrome nickel, monel, nickel, Everdur, etc., a number of which have been subjected to corrosion tests. Some forgings in carbon and alloy steel will also be on display.

In attendance: J. T. Dillon, president; G. O. Gondree, secretary; J. C. Holmberg, metallurgist; P. R. Hawthorne, welding engineer; L. H. Burkhardt, chief engineer; P. F. McEvoy, sales manager; H. W. How, consulting engineer; T. C. Schuyler, works manager; W. T. Davidson, engineer.

Stuart & Co., D. A., Chicago. Booth C-16.

Exhibiting (in operation): The new D. A. Stuart & Co. high load carrying capacity lubricating oils and greases for industrial and automotive requirements. The much discussed Timken Lubricant Testing Machine will be in operation daily and frequent tests will be run checking the lubricity of unidentified lubricants that visitors are invited to furnish. In addition there will be a display of various metal parts manufactured of stainless and other alloy steels such as S.A.E. 6150. These parts are particularly interesting as they demonstrate the smooth finish secured and the comparatively easy machinability made possible by the use of the D. A. Stuart & Co. metal working oil products developed especially for such conditions. A display of Sturaco high load carrying capacity oils and greases for severe conditions such as high loads, high temperatures and high rubbing speeds will also be featured.

In attendance: C. I. Grierson, president; T. B. Langdon, director of sales; W. H. Oldacre, director of research and engineering; C. H. Baker, Ohio manager; B. W. Deacon, Detroit manager; G. A. Dudley, Western New York manager; A. S. Hull, Philadelphia manager; A. J. McDuff, New England manager.

Surface Combustion Corp., Toledo, O. Booth Gas Section.

Exhibiting (in operation): Diffusion forge and combustion burner; automatic proportioning burners—high and low pressure; oven furnaces; high speed muffle controlled atmosphere furnace; atmospheric air heaters;

Continued on Page Six

American Welding Society Has Listed Big Program

Monday, Oct. 3

Registration—Facilities will be provided throughout the week from 9:30 A. M. to 5:00 P. M.

1:45 p.m.—174th Regiment Armory

Presiding officer—G. W. Swan, president of the Engineering Society of Buffalo.

ADDRESS OF WELCOME.

2:15 p.m.—Technical Session—174th Regiment Armory

Presiding officer—F. P. McKibben, president, A.W.S.
ROLLED STEEL DESIGNS FOR THE IRON AND STEEL INDUSTRIES, by Christian A. Wills, William B. Pollock Co.

CONDITIONING, SHAPING AND MACHINING OF CARBON STEEL WITH OXYGEN, by H. H. Moss.

CAR SCRAPPING, by W. H. Ludington, Air Reduction Sales Co.

6:30 p.m.—Hotel Statler

Dinner Meeting, Board of Directors.

Tuesday, Oct. 4

9:45 a.m.—Technical Session—Hotel Statler

Presiding officer—J. J. Crowe, member, Board of Directors, A.W.S.

Welding of Non-Ferrous Metals

WELDING OF DURALUMIN, by representative of Union Carbide and Carbon Research Laboratories.

WELDING OF HIGH NICKEL ALLOYS, by J. G. Shoener and F. G. Flocke, International Nickel Co.

LEAD WELDING, by R. L. Ziegfeld, Lead Industries Association.

2:00 p.m.—Technical Session—Hotel Statler

Presiding officer—C. A. Adams, director, American Bureau of Welding.

Fundamental Research in Welding

DETERMINATION OF INTERNAL STRESSES IN WELDS BY X-RAYS, by John T. Norton, Massachusetts Institute of Technology.

METAL DEPOSITION IN ELECTRIC ARC WELDING, by G. E. Doan, Lehigh University.

CORROSIVE FATIGUE TESTING, by W. E. Harvey, Lehigh University.

TESTS OF WELDED BUTT-STRAP JOINTS, by S. C. Hollister, Purdue University.

INFLUENCE OF A MAGNETIC FIELD PARALLEL TO THE IRON ARC ON WELDING, by F. R. Hensel and W. A. Maddox, Westinghouse Electric & Mfg. Co.

Wednesday, Oct. 5

9:45 a.m.—Technical Session—Hotel Statler

Presiding officer—J. B. Tinnon, chairman, National Meetings and Papers Committee.

Merchandising

APPLICATION OF WELDING TO THE MANUFACTURE OF HEAVY MECHANICAL EQUIPMENT, by A. E. Gibson, Wellman Engineering Co.

SELLING WELDED PRODUCTS, by T. C. Fetherston, Linde Air Products Co.

POPULARIZING THE WELDED PRODUCT, by G. M. Gillen, G. M. Basford Co.

2:00 p.m.—Technical Session—174th Armory

Presiding officer—J. G. Lincoln, past chairman, Cleveland Section.

PRE-QUALIFICATION TESTS OF WELDERS, by E. Lunn, chairman, former Committee on Qualification of Welders.

DISCUSSIONS OF Mr. Lunn's paper by H. E. Rockefeller, Linde Air Products Co., and A. Vogel, General Electric Co.

QUALIFICATION REQUIREMENTS FOR WELDERS, by V. P. Marran, Walsh Holyoke Steam Boiler Works.

REPAIR AND STRENGTHENING OF BRIDGES, by A. R. Wilson, Pennsylvania Railroad.

6:30 p.m.—Hotel Statler—Annual Dinner, Terrace Room

Thursday, Oct. 6

9:45 a.m.—Technical Session—Hotel Statler

Presiding officer—E. A. Doyle, past president, A.W.S.

LOAD TEST ON A WELDED ROOF TRUSS, by C. H. Jennings, Westinghouse Electric & Mfg. Co.

PROPERTIES OF METAL-ARC WELD METALS, by J. C. Hodge, Babcock and Wilcox Co.

DISCUSSION OF J. C. Hodge's paper by G. R. Brophy, General Electric Co.

METAL SPRAYING, by H. B. Rice, Metal Spray Co.

AUTOMOBILE REPAIR WELDING, by representative of job welding shop.

THYRATRON CONTROL FOR RESISTANCE WELDING, by W. C. Hutchins, General Electric Co.

2:00 p.m.—Technical Session—174th Regiment Armory

Presiding officer—H. C. Boardman, past chairman, Chicago Section.

APPLICATION OF WELDING TO PRESSURE VESSELS AND METALLURGY OF WELDS, by P. R. Hawthorne and J. C. Holmberg, Struthers-Wells Co.

WELDING OF PRESSURE VESSELS, by H. L. R. Whitney, M. W. Kellogg Co.

GAS WELDING OF PRESSURE VESSELS, by R. L. Shepard, Carbide and Carbon Chemical Corp.

AUTOMATIC WELDING WITH HEAVY COATED ELECTRODES, by L. R. Leveen, General Electric Co.

Friday, Oct. 7

Inspection Trip.

Wire Association Schedules Excellent List of Papers

Monday, Oct. 3

Registration and informal meeting at headquarters of the Wire Association in Hotel Statler all day.

Tuesday, Oct. 4

9:30 a.m.—Technical Session—Hotel Statler

Chairman—Kenneth B. Lewis, Morgan Construction Co., Worcester, Mass.

MATERIAL HANDLING IN WIRE MILLS, by L. D. Granger, Wickwire Spencer Steel Co., New York.

2:00 p.m.—Technical Session—174th Regiment Armory

PLANT MANAGEMENT, by John C. Callaghan, Steel Co. of Canada, Hamilton.

COST ACCOUNTING, by R. F. Cohn, Reynolds Wire Co., Dixon, Ill.

Wednesday, Oct. 5

9:30 a.m.—Non-Ferrous Session—Hotel Statler

Chairman—W. D. Pierson, Waterbury-Farrel Foundry & Machine Co., Waterbury, Conn.

COPPER ROD ROLLING, WIRE DRAWING AND ANNEALING, by John R. McKean, American Electrical Works, Phillipsdale, R. I.

2:00 p.m.—Technical Session—174th Regiment Armory

PROCESS CONTROL IN THE MANUFACTURE OF RUBBER COVERED WIRE, by E. G. Sturdevant, U. S. Rubber Co., Bristol, R. I.

Thursday, Oct. 6

9:30 a.m.—Technical Session—Hotel Statler

Chairman—Ralph K. Clifford, Continental Steel Co., Kokomo, Ind.

PATENTING, by R. B. Whyte, MacWhyte Co., Kenosha, Wis.

2:00 p.m.—Technical Session—174th Regiment Armory

STAINLESS STEEL, by Earl Smith, Republic Steel Corp., Youngstown, O.

Friday, Oct. 7

10:00 a.m.—Hotel Statler

Presiding—John Mordica, president of the Wire Association.

Annual Meeting of the Wire Association—Discussion of Wire Industry Preparedness Plan by representatives of War and Navy Departments.

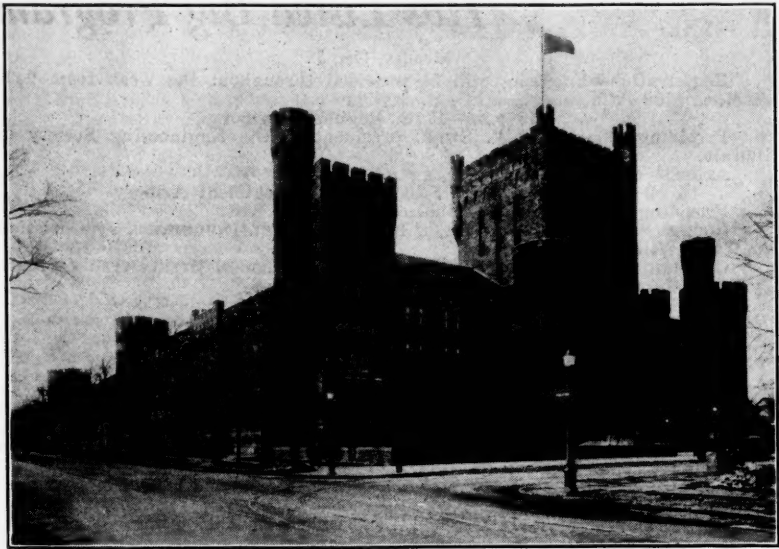
T. N. HOLDEN IN NEW POSITION

T. N. Holden, secretary-treasurer of the New York chapter of the A.S.S.T. for 10 years, is now in charge of the commercial heat treating service of Martin Forge Co., Brooklyn.

W. B. HURLEY WITH DETROIT EDISON

William B. Hurley, whose association with what is now the A.S.S.T. began in 1912, has become a member of the sales division of Detroit Edison Co. as power sales engineer.

Armory Where Show will Be Held



The 174th Regiment Armory in Buffalo upon whose great and unobstructed arena will stand the exhibits of the National Metal Exposition and in whose comfortable meeting rooms many of the afternoon technical sessions will be held.

Resolution on Death of George K. Burgess

The following resolution was offered following the death of Dr. George K. Burgess, president of A.S.S.T. in 1924.

RESOLUTION OF SYMPATHY

Whereas, The Ruler of the Universe has, in His infinite wisdom, called from our midst Doctor George Kimball Burgess and, Whereas, Those who have been fortunate enough to meet and work with him during his outstanding service to mankind and industry learned to respect, admire and love him,

Therefore Be It Resolved: That as we mourn our great loss we be consoled by the thoughts of his life of splendid usefulness and meritorious achievements; that the officers, directors, and members of the American Society for Steel Treating extend to Mrs. Burgess their heartfelt sympathy in her great bereavement; and that there may be preserved forever in the archives of the Society a record of the members' appreciation and regard for its Fourth President, that these resolutions be made a part of the permanent record of the Society, that a copy be published in the Society's publications, and a copy sent to Mrs. Burgess.

Given under our hand this 14th day of July, 1932.

Officers and Board of Directors
American Society for Steel Treating
A. H. d'Arcambal, President.
W. H. Eisenman, Secretary.

H. KENNETH BRIGGS RETIRED

(Continued from Page One)

career—economics, accounting, marketing and business law plus metallurgy and metallography.

He was for seven years metallurgist and assistant manager of Minneapolis Electric Steel Castings Co., managing the plant and business activities during the latter four years.

A charter member of the Northwest chapter of the A. S. S. T., he was twice chairman of that chapter and served on the Constitution and By-Laws Committee during the framing of the Society's present constitution.

An excerpt from the minutes of the Board of Directors' meeting on July 15, 1932, is as follows:

"Further consideration was given to possible additional reduction of Society and publication expenses. It was suggested that due to the low volume of advertising solicitation, contacting and direction could be handled by the secretary. The splendid services of Messrs. Briggs, — were recognized and fully appreciated, but the majority of the board felt a reduction of expenses in the advertising department to be advisable.

"Upon motion by Shepherd, seconded by Coleman, the services of Mr. Briggs as assistant executive secretary and advertising manager of the Society's publications were terminated Nov. 1, 1932. All present voting 'aye', excepting Watson and Eisenman, 'no'."

With his splendid training and experience there is a fine place for him in the industrial field. Sincere and best wishes are extended to him.

WANTED

Laboratory furnace, radiant type, 220 volts, 60 cycles, about 8"x4"x12" inside, maximum operating temperature 2000° F.; to include tap changing transformer. One Metallographic polishing machine, automatic or direct drive type.

One polishing machine not more than 1200 R.P.M. 1/4 horsepower.

Send full information to

Taylor Instrument Companies
Purchasing Department

THE LADIES WILL ALL LIKE BUFFALO

List of Things to do is Most Elaborate in Recent Years

Entertainment plans for ladies going to Buffalo for the National Metal Congress and Exposition the week of Oct. 3 are among the most elaborate in recent years.

Three luncheons and visits to Niagara Falls, East Aurora, home of the Roycrofters and the late Elbert Hubbard, and a trip through Buffalo's boulevard and park system with stops at a number of interesting places are included in the program.

The ladies will register in the Iroquois room of the Statler beginning at 9:00 a. m. on Oct. 3. The nominal registration fee of \$3.00 entitles each lady to participate in the full entertainment program, including the three scheduled luncheons, without further cost.

On Monday, the first day of the Convention, the ladies will attend a luncheon at the Statler, which will be followed by a trip around Buffalo in luxurious buses.

Tuesday's trip begins at 10:00 a. m. when buses leave the hotel for Niagara Falls, Lewiston and Fort Niagara. At Lewiston the ladies will transfer to the Gorge Railroad for a trip through the great gorge to Niagara Falls, where buses will meet them and after a tour of the American Falls take them to the General Brock Hotel on the Canadian side for luncheon.

East Aurora, the little town made world famous by the late Elbert Hubbard and the Roycrofters, will be visited on Wednesday. An hour or so will be spent in going through the various Roycroft shops, after which there will be a luncheon at the beautiful Roycroft Inn. After luncheon there will be a bridge party at the Inn with appropriate prizes.

What Exhibitors Will Show

Continued

cyanide pot furnace; Eutectrol gas carburizing product; bright annealing product.

In attendance: F. H. Adams, C. B. Phillips, H. M. Heyn, W. M. Hepburn, J. M. Brown, W. F. Herdrich, E. C. Stephenson, H. W. Schramm, W. B. Cooley.

Superior Steel Corp., Pittsburgh. Booth E-16.

Exhibiting: Articles and parts made from our rust resisting and heat resisting material, also Superior Metal, such as required for modern bright parts including automobile lamps, radiator shells, tire covers, hood hinges, door handles, mouldings and various other articles where a permanent bright finish is desired, including various architectural and building hardware applications. Our rust resisting material is a chrome-iron alloy containing high percentages of chromium with or without the addition of nickel. Superior Metal is a material of 80 to 90% low or high carbon content steel with 10 to 20% rust resisting metal on one or both sides.

In attendance: Frank R. Frost, president; P. C. Jennings, treasurer; John E. Wetzel, general manager of sales; Wm. P. Ewing, assistant general manager of sales; K. W. Massey, C. B. Halle, M. E. Lowder, representatives; W. G. Blume, assistant to vice-president; E. S. Park, district sales manager; L. D. Walters, assistant district sales manager.

Terkelsen Machine Co., Boston. Booth G-28.

Exhibiting (in operation): Three spiral wrapping machines which will be in operation spirally wrapping coils of steel, insulated and bare wires as well as straight lengths of same. Our subsidiary company, the Rinkle Krinkle Paper Co. will supply and exhibit creped papers for the operation of the three machines.

In attendance: Harold A. Myers, sales manager, Terkelsen Machine Co., president, Rinkle Krinkle Paper Co.; Edwin A. Terkelsen, secretary, Terkelsen Machine Co., secretary, Rinkle Krinkle Paper Co.

Thomas Steel Co., Warren, Ohio. Booth C-20.

Exhibiting: Various samples of strip steel, in coils and flat lengths. Also display of stamped metal parts.

In attendance: W. F. Rummell, sales manager; H. A. Mentall, superintendent.

Timken Steel & Tube Co., Canton. Booth D-7.

Exhibiting: Samples of Timken seamless tubing and also a complete display of photographs, samples and microphotographs illustrating the value and application of proper grain size to parts manufacture.

In attendance: F. J. Griffiths, president; H. H. Timken, Jr., vice-president; W. H. Wiewel, sales manager; S. D. Williams; R. Atkinson; Ralph Wilson, metallurgical engineer; L. L. Farrell, metallurgical engineer; Walter J. Hildorf, metallurgical engineer.

RYERSON CO. IS 90 YEARS OLD

Founded in 1842 by Joseph Ryerson, the firm of Joseph T. Ryerson & Son, Inc. will be ninety years old on Nov. 1, 1932. The first store was established in Chicago, then a small town of barely 6,000 inhabitants. Wiped out by the Chicago Fire in 1871, the business was immediately continued in temporary quarters. From the very beginning the venture proved successful and moves were made into larger quarters.

In 1902 complete new warehouses were erected which now serve as the Chicago plant of the nation-wide organization. Other plants are located in Milwaukee, Detroit, St. Louis, Cincinnati, Cleveland, Buffalo, Philadelphia, Jersey City and Boston.

The initial stock carried by the little store consisted of a limited group of iron products in demand by mechanics, builders, boiler makers and other workers in iron and steel. As new products and new uses for steel were developed, Mr. Ryerson was quick in adding to the stocks.

LINCOLN DESCRIBES NEW WELDER

Lincoln Electric Co., Cleveland, describes its new "Shield-Arc" welder in a new booklet which explains the novel features of the machine. Illustrated.

Employment Service Bureau

Address answers care of A. S. S. T., 7016 Euclid Ave., Cleveland.

POSITIONS WANTED

METALLURGICAL EXECUTIVE: Twenty years as metallurgical engineer for large die casting plant, superintendent of machine works, technical director of large non-ferrous plant. Address 9-5.

SALES EXECUTIVE: Experienced in design, manufacture and sale of furnaces; for past 3 years district manager for large electric furnace manufacturer. Address 9-10.

SALESMAN: Wants to represent concern supplying heat treating materials in Detroit and vicinity. Have covered this territory for 7 years. Address 9-15.

CHEMIST - METALLURGIST: Experience embraces ferrous and non-ferrous industries, also rare metal alloys. Accomplishments cover plant, laboratory, research, heat treating, electroplating, pyrometry. Can direct and supervise a complete metallurgical department. Address 9-20.

ENGINEER: Graduate electrical engineer with 9 years sales experience handling electric furnaces, heating elements. Address 9-25.

METALLURGIST: Wants position as research worker or investigator of ferrous metallurgical problems. Has extensively investigated chrome and chrome-nickel alloys. Address 6-30.

TEACHER OF ENGINEERING: Wide experience on faculties of engineering schools and in the field in metallurgy and sanitary engineering. Well qualified to teach both. Address 9-35.

STEEL TREATER: Steadily employed as steel treater for 14 years. Wide experience. Address 9-40.

EXECUTIVE ENGINEER: Can supervise design and manufacture of factory tool equipment. Experience covers design of tools and machines for numerous types of plants. Address 9-45.

CHEMIST: Nine years analytical experience with alloy steels, alloys of silicon, chromium, nickel, tungsten, vanadium, etc., ores and slags. Address 9-50.

METALLURGIST: Familiar with pump and rock drill materials, corrosion resistant alloys, chromium and cadmium plating and physical testing. Address 9-55.

ENGINEER: Primarily an electrical engineer but work dealt enough with metals to warrant A.S.S.T. membership. Was chief engineer for portable electric tool manufacturer until company went out of business. Will work on fee basis. Address 9-60.

METALLURGIST: Has had full charge of heat treating for automobile plants here and abroad. Has served as executive and consultant for large firms. Address 9-65.

RESEARCH ENGINEER: Past 10 years on gas and electric welding research for large laboratory. Graduate electrical engineer who has specialized in metallurgical applications of the electrical industry. Address 9-70.

STEEL FOUNDRY METALLURGIST: Experienced in casting steel to meet variety of physical test requirements. Held last position until firm failed. Address 9-75.

METALLURGIST: Education and early technical experience in Germany. Over 5 years in U. S. with large companies. Now in charge of mill control, annealing department and physical laboratory of alloy steel manufacture. Fluent English. Address 9-80.

Union Carbide & Carbon Corp., New York. Booths E-1, D-6, and E-7.

Union Drawn Steel Co., Massillon. Booth C-23.

Exhibiting: Cold drawn, turned and polished, ground and polished steel bars in display cases. Also, samples of parts made from cold drawn bars.

In attendance: B. F. Fairless, president; L. E. Creighton, vice-president and general manager; J. P. Moseley, secretary-treasurer; F. C. Young, general manager of sales; J. D. Armour, chief metallurgist; J. E. Allen, Buffalo district sales manager; R. L. Hill, sales representative; J. C. Murphy, sales representative.

U S L Battery Corp., Niagara Falls, N. Y. Booth C-4.

Welding Engineer Publishing Co., Chicago. Booth A-30.

Exhibiting: Magazines, books, charts and educational material for the welding industry.

In attendance: H. S. Card, editor; T. E. DePew, eastern manager.

Wheelock, Lovejoy & Co., Inc., Cambridge, Mass. Booth C-18.

Exhibiting: Unusual parts illustrating the application of various analyses of "Hy-Ten" and "Economo" alloy machinery steels.

In attendance: A. Oram Fulton, president; Frederick H. Lovejoy, vice-president; Stanley W. Parker, manager, Chicago branch; Edward C. Bartlett, manager, Cleveland branch; Thomas W. Knight, Buffalo territory; C. R. Jenks, Cleveland territory.

Wickwire Spencer Steel Co., New York. Booth D-21.

Exhibiting: Samples of Wissco wire conveyor belts illustrating the various advantages of the many patented Wissco features; also engineering charts developed through thorough research showing tangible performance data which eliminates the old practice of guessing as to the proper belt construction for a given purpose; also samples of Wissco wire, springs, and Wissco welding wire.

In attendance: A. G. Busemann, wire and springs sales manager; W. D. McKenny, Buffalo district sales manager; J. R. Worsfold, sales manager mechanical specialties division; D. J. Henecker, assistant sales manager, Buffalo district.

Williams & Co., J. H., Buffalo. Booths C-15 and C-17.

Exhibiting: Special drop forgings, heat treated products, miscellaneous wrenches. Automotive and industrial socket and open end wrenches. Pipe tongs and pipe vises. There will also be a large electric Neon sign and revolving pedestals.

In attendance: A. D. Armitage, vice-president; Hugh Aikman, secretary; J. C. Scanlon, manager special sales; A. C. Nuth, salesman—special sales division; A. F. Bell, sales engineer; C. F. Murphy, salesman—stock division.

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